
Science Flight Report

Operation IceBridge Arctic 2012



Flight: F28

Mission: Helheim-Kangerdlugssuaq Gap 02

Flight Report Summary

Aircraft	P-3B (N426NA)
Flight Number	29
Flight Request	12P006
Date	Monday, April 23, 2012 (Z)
Purpose of Flight	Operation IceBridge Mission Helheim-Kangerdlugssuaq Gap 02
Take off time	10:19 Zulu from Kangerlussuaq (BGSF)
Landing time	17:55 Zulu at Kangerlussuaq (BGSF)
Flight Hours	7.7 hours
Aircraft Status	Airworthy.
Sensor Status	All installed sensors operational.
Significant Issues	None.
Accomplishments	<ul style="list-style-type: none">• Low-altitude survey (1,500) of glaciers and ice sheet profiles.• ATM, snow, Ku-band, accumulation radar, MCoRDS gravimeter, magnetometer, DMS and KT-19 skin temperature sensor were operated on the survey lines.• Pitch and roll maneuvers for snow and Ku-band radar.• No ramp pass due to weather.
Geographic Keywords	Helheim Glacier, Kangerdlugssuaq Glacier
Satellite Tracks	None
Repeat Mission	2010

Science Data Report Summary

Instrument	Instrument Operational			Data Volume	Instrument Issues
	Survey Area	Entire Flight	High-alt. Transit		
ATM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	76 GB	LTN 100 outage on T4
MCoRDS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.9 TB	None
Snow Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	750 GB	None
Ku-band Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	750 GB	None
Accumulation Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	190 GB	None
DMS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	107 GB	None
KT-19 Skin Temp.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10 MB	None
Gravimeter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.5 GB	None
Magnetometer	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	560 MB	None

Mission Report (Michael Studinger, Mission Scientist)

This is a new mission, designed primarily to map the bedrock of the ice sheet in the space between Helheim and Kangerdlugssuaq Glaciers. The grid is spaced at approximately 10 km, and it conforms to the 2010 LVIS grid flown here in that one of these lines is designed to repeat the 2010 lines, for dh/dt purposes. This mission is designed to complement the Helheim-Kangerdlugssuaq Gap 01 mission by continuing that grid in the upslope direction. We also fly the centerline of two glaciers in the area (names unknown) for the first time. We transit to and from the area along central Greenland master grid lines.

The weather was perfect today.

Individual instrument reports from experimenters on board the aircraft:

ATM: Both ATM systems worked well and collected good data along the entire line in cloud free conditions. ATM collected a total of 7.1 hours of science data with 100% coverage. The computer that logs the LT-100 data on the T4 system had an outage. The Applanix 610 data will be used instead.

MCoRDS: The MCoRDS system worked well.

Snow and Ku-band radar: The snow and Ku-band radars worked well on the primary system.

Accumulation radar: Worked well today.

Gravimeter: Worked well.

Magnetometer: Worked well and used the SGL data logger today without problems.

DMS: DMS worked well and collected 19170 frames.

KT-19 skin temperature sensor: System worked well.

